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SCIENTIFIC

Number 49

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NOTE

In indexing these abstracts the following guides are used: MEDICINE - "Quarterly Cumulative Index Medicus," American Medical Association; CHEMISTRY - "Chemical Abstracts Subject Index," American Chemical Society; GENERAL - "Subject Headings for Technical Libraries," US Department of Commerce, Office of Technical Services.

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FDB Periodical Abstracts Scientific No 49

USSR/Chemistry - Protons
Chemistry - Photochemistry

Oct 1947

"Phototransfer of Protons in Organic Systems," Acad
A. N. Terenin, A. V. Karyakin, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3

Transfer between molecules in organic compounds facilitated as result of the influence of light in the first stages of the photochemical oxidizing-reducing process. Authors describe experiments conducted to study the "interlinked" systems, composed of acid as well as ordinary molecules, united by strong hydrogen bond, and in which the protons to large degree belong simultaneously to both partners of the union. They

FDB

49T1

USSR/Chemistry - Protons (Contd)

Oct 1947

used colored as well as fluorescent indicators for acidity. Vacuum technique was also used. Submitted, 30 May 1947.

FDB

49T1

USSR/Chemistry - Quinoline

Oct 1947

Chemistry - Malaria - Antimalarial Compounds

"Open Analogies of Quinoline Series Antimalarial Substances," V. I. Stavrovskaya, K. S. Topchiyev, Inst Malaria and Med Parasitol, Acad Med Sci USSR, 3 1/2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Numerous experiments have been conducted to evolve simpler method for the formation of biologically active compounds. Authors discuss possibility of obtaining active preparation in which the N-atom in the quinoline heterocycle would be replaced by an N-atom in same electronic state, but not belonging to the quinoline ring. During the course of experiments they

FDB

49T3

USSR/Chemistry - Quinoline (Contd)

Oct 1947

synthesized, among other substances, 4-benzamino-3,4-diethylaminopropyl-aminoanisol. Submitted by Academician A. N. Nesmeyanov, 9 Mar 1947.

FDB

49T3

USSR/Chemistry - Catalysts
Chemistry - Isotherms

Oct 1947

"Poisoning and 'Modification' of Catalysts," L. Ya. Margolis, O. M. Todes, Catalysts and Topochem Sec, Inst Phys Chem, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3

Roginskiy's works showed that concentrated isotherm of the admixture has optimum amount of catalytic activity: Small additions of isotherms promote the reaction, whereas too large amounts "poison" the catalyst. Authors describe results of experiments conducted to determine the effect of small additions on spinel-type catalysts. Their interest directed

FDB

49T2

USSR/Chemistry - Catalysts (Contd)

Oct 1947

to this reaction as result of investigations of results of catalytic oxidation of iso-octane. Submitted by Academician A. N. Frumkin, 31 Mar 1947.

FDB

49T2

USSR/Chemistry - Nitrogen Fixation
Chemistry - Microorganisms

Oct 1947

"Theory of the Fixation of Atmospheric Nitrogen by Microorganisms," Ye. N. Gapon, Lab Biophys and Chem Problems, Moscow Agr Acad imeni K. A. Timiryazev, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Although study of biological fixation of atmospheric nitrogen has been fairly thorough, still no universally adopted theory on this process. Discusses the two most popularly accepted theories on fixation of atmospheric nitrogen: 1) hydrogenation of nitrogen and formation of ammonia; and 2) hydration of nitro-

FDB

49T4

USSR/Chemistry - Nitrogen Fixation (Contd)

Oct 1947

gen and formation of hydrate of nitrogen, such as ammonium hydroxide. Submitted by Academician D. N. Pryanishnikov, 1 Apr 1947.

FDB

49T4

RESTRICTED		FDB Periodical Abstracts Scientific No 49		RESTRICTED	
USSR/Electricity Insulating Materials, Electrical Electrical Equipment	Oct 1947	USSR/Electronics Electrons - Emission Conductivity	Oct 1947		
"Use of Insulating Materials With High Conductivity in Electric Techniques," G. I. Epshteyn, 3½ pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 Explains new principle adopted in construction of insulating systems. Basically, the principle of calculated approach to the parameters of the circuit, which yield to changes, instead of using material with the best quantitative indicator. Submitted by Academician V. F. Mitkevich, 13 Feb 1947.		"Electronic Emission Moving Along Circular Orbit in Space Bounded by Metal Walls," M. L. Levin, Phys Tech Inst, Gor'kiy State U, 5½ pp "Zhur Tekh Fiz" Vol XVII, No 10 Reports results of observations conducted on electronic emissions moving at constant speed on circular orbit: 1) inside of ideal conduit pipe with round cross section, so that the orbit lies in line with the lateral cross section and concentric with it; and 2) between two ideal conducting parallel planes, so that orbit lies on the same plane and			
FDB	49T5	FDB	49T6		
USSR/Engineering Fuels, Diesel Fuel Conservation	Jan 1947	USSR/Electronics (Contd)	Oct 1947		
"Methods of Rationalizing the Fuel Consumption at Power Stations," I. I. Ivanov, Ministry Transp, 10 pp "Energeticheskii Byull" No 1 States that to make any sort of rationalization in fuel expenditure, necessary to determine the technological norms. Any increase should be based on combined norm of the technological norms. Presents formulas to calculate the norms for individual station having one Diesel unit operating, and later discusses determination of formulas for case where two, three or more Diesel units operate at one station.		equidistant from the two conducting planes. Submitted, 1 Feb 1946.			
LC	49T7	FDB	49T6		
USSR/Engineering Belts, Conveyor Bushings	Oct 1947	USSR/Engineering Construction, Underground Braces	Oct 1947		
"Graphite Textolite Bushings for Rollers of Belt Conveyers," T. S. Burchak, Candidate Tech Sci, Stalino, 1½ pp "Ugol'" No 10 (259) Briefly describes deficiencies noted in regard to the bearings for conveyor-belt rollers. Recently at the Donbass mines, however, adopted graphite-impregnated cloth bushings for these bearings. States that performance of bushings very favorable. One of greatest advantages: No special precautions must be taken to safeguard bushings from dust.		"Use of Tubular Centrifuged Ferroconcrete Supports for Strengthening Mine Tunnels," Prof V. V. Mikhaylov, Dr Tech Sci; M. N. Geleskul, Engr, 2½ pp "Ugol'" No 10 (259) Discuss quality of ferroconcrete supports produced by the Kuybyshev Works of the StalinUgol' Combine, and also results of use of these ferroconcrete supports in the tunnels of the Donbass mines. Found to be more efficient than wooden supports, especially from standpoint of durability and strength.			
FDB	49T8	FDB	49T9		
USSR/Geology Geological Prospecting	Oct 1947	USSR/Engineering (Contd)	Oct 1947		
"Classification of Coal Pteridosperms," Ye. O. Novik, Inst Geol Sci, Acad Sci USSR, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 General account of various findings made on species of the Cycadofilices class (pteridospermae) found in the rock coal deposits in the European part of Russia. Submitted by Academician V. N. Sukachev, 13 Apr 1947.		Most important factor: Ferroconcrete supports completely fireproof.			
FDB	49T10	FDB	49T9		

RESTRICTED	FDB Periodical Abstracts Scientific No 49	RESTRICTED
USSR/Geology Stratification Oct 1947 "Mazar-Tag Folds in the Tarim Settled Massif," V. M. Sinitsyn, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 Mazar-Tag Mountain Range located in western part of the Tarim depression in sandy wastes of Takla-Makan. Sinitsyn describes some geological details of range. Interest first directed to this range after N. M. Przheval'skiy conducted study of the eastern end of range, in vicinity of Khotan-Dar' River Delta. Submitted by Academician V. A. Obruchev, 26 Apr 1947.	USSR/Geology Stratification Oct 1947 "Stratigraphy of the Tara Flora Deposits," V. A. Nikolayev, West Siberian Br, Acad Sci USSR, 2 1/2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Three well-established sources for geological specimens in west Siberia: 1) in vicinity of Tara, 2) from Antropov Station on the Tavda River, and 3) on right bank of the Irtysh River at d. Isakovka. Briefly evaluates data obtained from the three sources and applies toward defining stratigraphy of Tara flora deposits. Submitted by Academician V. A. Obruchev, 19 Mar 1947.	
FDB 49T11 USSR/Geology Oct 1947 "New Data on Fauna of Foraminifera in the Permian Deposits of Caucasus," A. D. Miklukho-Maklay, Inst Earth's Crust, Leningrad State U, 2 1/2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 In 1945 Prof S. S. Kuznetsov obtained several samples from the red-colored conglomerate of Arkhyz River deposits. Discerned remains of large foraminifera in some samples. Concluded that they are similar to those found in the central Permian deposits of Sumatra and Indochina. Also indicated that during the Permian age Northern Caucasian and Armenian Basins were linked. Submitted by Academician V. A. Obruchev, 19 Mar 1947.	FDB 49T12 USSR/Geology Oct 1947 Ore Deposits "Continuation of Ore Belts of the Eastern Transbaykal into Territory of the Mongolian People's Republic," A. D. Kalenov, 2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Discusses continuation of the Transbaykal ore belts into the Mongolian People's Republic. In particular, discusses this phenomenon in regard to continuation of the tin and wolfram deposits. Submitted by Academician S. S. Smirnov, 15 Apr 1947.	
FDB 49T13 USSR/Geology Oct 1947 Volcanology "Lower Mesozoic Volcanoes of Southwestern Spurs of the Tyan'-Shan," N. P. Vasil'kovskiy, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Nasledov and other geologists put forth the theory that there is continuation of volcanic activity in the Lower Mesozoic layers of the Kuraminsk Mountain Range. However, no paleontologic data to substantiate theory. Author explains certain geologic factors, which he says should help substantiate the theory that such volcanic action does continue to the Lower Mesozoic layer. Submitted by Academician D. V. Nalivkin, 4 Apr 1947.	FDB 49T14 USSR/Geology Oct 1947 "Basic Units in Geochronology," A. N. Mazarovich, Moscow State U imeni M. V. Lomonosov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 Contemporary system for classifying geologic ages established some 100 years ago, haphazard classification. Author presents table that is his opinion on how geologic ages should be classified. Submitted by Academician D. S. Belyankin, 23 Apr 1947.	
FDB 49T15 USSR/Geology Oct 1947 Stratification "Lower Permian Deposits in Tartary," L. M. Miropol'skiy, Kazan Br, Acad Sci USSR, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 Lower Permian deposits of Tartary divided into two basic layers: 1) Artinsk strata (Lower), and 2) Kungur strata (Upper). Author discusses some details of Lower Permian deposits on the basis of above-mentioned divisions. Data obtained during intensive field studies conducted in 1939. Submitted by Academician D. S. Belyankin, 31 Mar 1947.	FDB 49T16 USSR/Geology Oct 1947 Stratification "Correlation of the Jurassic and Carboniferous Deposits of the Onon River (Eastern Transbaykal)," I. V. Lychitskiy, 3 1/2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 Briefly describes data obtained by author in 1946, which permits him to make observation that in many parts of the Onon River region the Jurassic strata is not a well-defined layer by itself, but takes on characteristics of the Lower Carboniferous strata and very frequently the Jurassic strata intrudes into the Lower Carboniferous. Submitted by Academician D. S. Belyankin, 22 Apr 1947.	
FDB 49T17	FDB 49T18	

RESTRICTED	FDB Periodical Abstracts Scientific No 49	RESTRICTED
USSR/Geology	Oct 1947	USSR/Geology - Research Mar 1946
"Lower Pliocene of the West Siberian Depression," V. A. Nikolayev, West Siberian Br, Acad Sci USSR, 4 pp		"Premature Fulfillment of Year's Plan," A. P. Suchilin, ½ p
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3		"Razvedka Nedr" No 2
States that the west Siberian depression can be divided into two Neocene layers: 1) the Miocene, and 2) the Pliocene. Lower Pliocene layer is on an average 85 m in thickness. States that this layer is in turn divided into three main parts: 1) the Beshcheul layer, 2) Ishim layer, and 3) Cherlak layer. Majority given to describing properties of the three layers. Submitted by Academician V. A. Obruchev, 29 Mar 1947.		Lists organizations under jurisdiction of the Committee for Geological Matters of the Council of Ministers USSR, GlavGeologii of the Ministry of Non-ferrous Metals USSR, GlavUgleRazvedka of the Ministry of Coal Industries for the Eastern Regions, State League of the Geophysical Trust of the Ministry of Petroleum Industries, and GlavGeologii of the Ministry of Construction Materials, which have already fulfilled their year's plan.
FDB	49T19	LC 49T20
USSR/Geology Stratification	Oct 1947	USSR/Geology Stratification Oct 1947
"Zilair Layers on the Western Slopes of the Central Urals," G. A. Smirnov, Ural State Geol Adm, 2 pp		"Growth of the Elburganskiy Layer of Paleocene Deposits of the Northern Caucasus," I. A. Korobkov, Leningrad State U, 3 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3
In 1930, Libroviich first informed the world of presence of a Zilair strata in south part of the Urals. Author states results of many years of work he conducted to determine the true nature of the Zilair layers he discovered in the southern part of the Ufimsk amphitheater. Discusses nature of these deposits and some of the animal and vegetable remains obtained from them. Submitted by Academician D. V. Nalivkin, 23 Apr 1947.		Briefly reports results of many years of study on the mollusks he obtained from various parts of the Northern Caucasus. Study permitted him to come to some definite conclusions on the growth of the lower layers of the Paleocene deposits of this area. States that most important result of his work is that it permits some degree of paleographic
FDB	49T21	FDB 49T22
USSR/Geology Seismology	Oct 1947	USSR/Geology (Contd) Oct 1947
"Registration of Extensive Deformation of the Elements of the Earth's Crust during Earthquakes," N. V. Veshnyakov, Seismol Inst, Acad Sci USSR, 4 pp		reconstruction of deposits of this area. Submitted by Academician D. S. Belyankin, 20 May 1947.
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3		
Author discusses various points to bear out his contention that the action of deformation should be studied along with the action of agitation in seismologic observations. Claims that main reason for not noting deformation is that it is more difficult to observe and also noticed far less than the action of agitation. Discusses use of seismic extensometer.		
FDB	49T23	FDB 49T22
USSR/Geology (Contd)	Oct 1947	USSR/Geology Stratification Apr 1947
developed for registering extensive deformation of elements in the earth's crust. Submitted by Academician O. Yu. Shmidt, 10 May 1947.		"On Certain Forms of Tectonic Displacements of Carboniferous-Artinskian Deposits on the West Slope of South Urals," A. A. Bogdanov, B. M. Keller, 9 pp
		"Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 4
		Two tectonic zones distinguished, differing from each other in Paleozoic surface deposits and in structural formation. In the north, the Devonian deposits begin with the horizon of quartz sandstone, and covered by limestone, including the Givetian stage of Middle Devonian, Upper Devonian and
FDB	49T23	LC 49T24

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USSR/Geology Dolomite	Apr 1947	USSR/Geology (Contd)	Apr 1947		
"Carbonates in Contemporary Lagoon Basin and Their Importance for the Problem of Dolomite Formation," N. M. Strakhov, 33 pp "Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 4 Discusses data on the carbonate regime of the lagoon and saline lakes of the Azov, Black and Caspian sea-coasts, and the carbonates in their bottom deposits. Distinguishes two types of lagoons: 1) those with deposits of calcite almost exclusively, with insignificant admixture of dolomite, and 2) those with calcite		Carboniferous deposits. In the south, the limestone series replaced by terrigenous deposits with intercalated horizons of plate limestone. Intensity of folding sharply increases in the northwest where peculiar overturned recumbent folds observed, i.e., the Kuzminskaya overturned syncline. Probable that formation of this fold connected with the process of gravitational tectogenesis.			
LC	49T25	LC	49T24		
USSR/Geology (Contd)	Apr 1947	USSR/Geology Stratification	Mar 1947		
deposits of small salinity, and with calcite and magnesite of high salinity, with insignificant admixture of dolomite. Explains formation of dolomite as dependent upon the CO₂ concentration in the air and the alkaline reserve in the sea and lagoon water.		"On the Nature of Cambrian and Silurian Within the Main Devonian Layer and Minor Folding in the Silurian and Devonian Layers of the Leningrad District," F. A. Alekseyev, 7 pp "Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 3 Dislocated Cambrian-Silurian exposures among the Devonian formations, and dislocations of Cambrian, Silurian and Devonian layers near Leningrad considered tectonic. Boreholes on the Cambrian and Silurian exposures along Polist and Proussye Rivers			
LC	49T25	LC	49T26		
USSR/Geology Geological Prospecting	Mar 1947	USSR/Geology (Contd)	Mar 1947		
"Yergen River (on the Occurrence of the Yergen Sands)," Yu. A. Petrokovich, 9 pp "Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 3 The Yergen sands represent variety of arenaceous rocks of the Pliocene layers located between the Volga and Oka Rivers and extended southward to stream network of the Yergen River. Where these rivers cut the Don-Medveditsa Rivers, low island formed, covered by the same Yergenian deposits. Later, during the preglacial epoch, the Yergen erosion system buried under		and distortions in the bedding of Devonian, Cambrian and Silurian strata on the south shore of Ilmen Lake near Leningrad proved to be of glacial origin. Glacial dislocations associated with preglacial forms of relief and large tectonic structures. In the Leningrad and adjacent regions these are typical of platforms.			
LC	49T27	LC	49T26		
USSR/Geology (Contd)	Mar 1947	USSR/Geology Stratification	Mar 1947		
thick layer of deposits produced by the Don tail of the Russian glacier. Bed of the Yergen River cut 50-75 m into the Russian Plain, and can now be traced over 1,500 km.		"Fundamental Problems of Folding Mechanism," V. V. Belousov (with participation of I. V. Kirillovov, N. A. Rozanovoy, A. V. Goryacheva), 26 pp "Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 3 Kinematic mechanism of folding depends more on redistribution of plastic rocks than on harder interlayers. Because the flow of different rock layers varies in intensity, the material presses out to form the crest and troughs of a fold. The greater the plasticity, the deeper the fold. Such defor-			
LC	49T27	LC	49T28		

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USSR/Geology	Mar 1947	USSR/Geology (Contd)
"Materials for Investigation of Fossil Algae of the USSR. Fossil Chara, Their Importance, Anatomy and Methods of Their Study," V. P. Maslov, 15 pp		Mar 1947
"Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 3		mation produces cleavage of several types: main cleavage (parallel to axial surfaces of the fold); fanlike (converging along anticlines); the S-like (curving of main cleavage); dynamic (curving of separate layers); and transverse cleavage. Further decrease of the deformation plasticity and sliding concentration results in the formation of para-classes and diaclasses.
After short review of importance of Chara and of usual methods for their determination, author suggests his own method based on the longitudinal transparent thin sections of the fossil. Gives dimensions and brief characteristic sketches for four of the oogonia fossils of the Kirghiz region: Chara meriani Unger, Chara meriani var. delicata var. nov., Chara	49T29	49T28
USSR/Geology (Contd)	Mar 1947	USSR/Geology
meriani var. acutalis. var. nov., and Chara crassa Dollfus et Fritel. Gives distinguishing characteristic of each.		Seismology
LC	49T29	"Certain Data Concerning Seismotectonics of the Crimea," G. P. Gorshkov, A. Ya. Levitskaya, 9 pp
meriani var. acutalis. var. nov., and Chara crassa Dollfus et Fritel. Gives distinguishing characteristic of each.		"Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 3
LC	49T29	Gives data on location of epicenters, intensity, and isoseisms of Crimean earthquakes. Geologic and seismic data indicate importance of certain transverse tectonic directions, especially along the line from Alushta to Simpheropol. Explains lack of earthquake penetration in Kertch Peninsula. South shore of Crimean Peninsula is area where in-
USSR/Geology Bottom Sediment	Apr 1947	LC
"Bottom Deposits of the Aral Sea," V. P. Zwnkovich, 20 pp		49T30
"Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 4		USSR/Geology (Contd)
Geographically describes the Aral Sea, and discusses its geology. Describes various investigations of the sea bottom deposits studied by author. Some 92 samples subjected to determination of carbonates, microscopic analysis, and mechanical analysis of silts. Relative rate of sedimentation in different parts of the basin greatest in regions in front of	49T31	Mar 1947
LC	49T31	tensity greatest (8 international units); the plain region experiences the least, with 5 units.
USSR/Geology (Contd)	Apr 1947	LC
the deltas; maximum rate of sedimentation supposed in the central part of the basin, where sediment predominantly chemical. Deposits in shallow water areas due primarily to dying-out fauna and denudation of shell deposits.		Geological Prospecting
LC	49T31	USSR/Geology
		"On Two New Genera of Brachiopods from the Upper Palaeozoic of Arctic Regions," B. V. Miloradovich, 8 pp
		"Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 3
		Describes two new genera of Brachiopods: Gamdaella olgae gen. et sp. nov., monotypical genus discovered with the Lower Permian fauna on Vaigatch Island; and Pseudoleptaena gen. nov. (genoholotype Leptaena distorta Sow.) which branched from Leptaena during the Tournaisian age, reached maximum development during the Upper Visean and Namurian eras, and then died out. LC

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USSR/Geology Sediment		Mar 1947		USSR/Geology Surveying, Geophysical		Mar 1946	
"On the Quaternary History of Tarim Depression," V. M. Sinitsyn, 11 pp				"Use of Magnitometry and Electrometry for Geological Mapping and Surveying for Nickel Ores in the Rezhev Region (Central Urals)," M. A. Karasik, 3 pp			
"Byull Moskov Obsh Isp Pri, Nova Ser, Otdel Geol" Vol XXII, No 3				"Razvedka Nedr" No 2			
Jurassic forms of relief continued their development into the Pleistocene era. During this time the Tarim depression included only the Kutcharskiy and Jarkend Basins. Climate more humid than the contemporary one. Author describes various sediments of the period, and their geological changes. During the last millenium the surface discharge of rivers decreased; ground				Nickel deposits found in this area for the most part of the alluvial type. All known nickel deposits and lodes can be divided into three types. This deposit belongs to second type, i.e., nickel which has settled in cracks, and come in contact with serpentine or granite. Author briefly describes work done toward mapping this area with the aid of magnitometry			
LC		49T33		LC		49T34	
USSR/Geology (Contd)		Mar 1947		USSR/Geology (Contd)		Mar 1946	
waters sunk to greater depth; forests of the Tarim Plain perished; and sands covered settlements inhabited between the 3d and 7th centuries. Gives location and types of soils of the period.				and electrometry. This method of surveying based on the wearing away of rocks.			
LC		49T33		LC		49T34	
USSR/Geology Stereophotogrammetry Geological Prospecting		Mar 1946		USSR/Geology - Research		Mar 1946	
"Use of Terrestrial Stereophotogrammetry for Geological Surveys," A. I. Vereyn, 3 pp				"Results of Socialistic Competition of the Geological Administration, Parties and Expeditions for Last Quarter of 1945" 3 pp			
"Razvedka Nedr" No 2				"Razvedka Nedr" No 2			
In postwar period one of most important tasks is discovery of new mineral and ore deposits to supply the demands for fulfillment of the five-year plans. One innovation was use of aerial photography for geological surveys. In certain aspects this method was unsatisfactory, however, and as result Soviet scientists developed system of terrestrial stereophotogrammetry				Following organizations awarded prizes for their work in last quarter of 1945: first prize, Ural Geological Administration; second prize, Uzbek Geological Administration; third, Belorussian Geological Administration; and fourth, Onego-Ladoga Section of an Aerological Expedition, etc. Briefly lists work for which each of the winners received acknowledgment.			
LC		49T35		LC		49T36	
USSR/Geology (Contd)		Mar 1946		USSR/Hydrography Freezing		Oct 1947	
or phototheodolite photographs to obtain better detail of relief and stratification. Author briefly describes the operation of this new system of survey.				"Uneven Distribution of Growth During the Change in Water as Result of Freezing," P. N. Kapterev, 4 pp			
				"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2			
				Water expands by some 9% of its original volume on freezing. Briefly discusses experiments conducted during 1934-1936 at Skovorodinsk Scientific Research Freezing Station (Chitinsk Oblast) to study the uneven nature of expansion during freezing. Showed that whereas expansion can progress very greatly in one direction, it may on the other hand result in a decrease of volume. Submitted by Academician V. A. Obruchev, 10 Apr 1947.			
LC		49T35		FDB		49T37	

RESTRICTED	FDB Periodical Abstracts Scientific No 49	RESTRICTED
USSR/Hydrology Geological Prospecting "Study of Water as Means of Locating Semimetallic Deposits," Ye. A. Sergeyev, 5 pp "Razvedka Nedr" No 2 Claims that in many instances small streams find their sources near mineral deposits. During the course of years they wear away these deposits and wash them down their currents. Claims therefore that study of the concentrations of minerals in streams and rivers would in many cases lead to discovery of mineral deposits. Explains method for making these tests and using data obtained for locating mineral deposits.	Mar 1946 <	

RESTRICTED	FDB Periodical Abstracts Scientific No 49	RESTRICTED
USSR/Mathematics - Calculations Oct 1947 "Impossibility of Some Algorithms in the Theory of Associative Systems: II," A. Markov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 Refers to two articles by A. Church in "Journal of Symbolic Logic" 8:2,50 (1943), and by E. L. Post, "American Journal of Mathematics" 65,197 (1943). Markov states that in the two articles one problem not explained well enough. It was stated that the "right divisibility" increased when b is divided by a, i.e., the solution of the relation of x in the equation $x \cdot a = b$. Markov attempts to clarify results obtained and to establish easier methods to arrive at these results. Submitted by Academician I. M. Vinogradov, 21 Apr 1947. FDB 49T45	USSR/Medicine - Spermatogenesis Medicine - Insects Oct 1947 "Achromatic Apparatus in the Spermatogenesis of Some Hemiptera," L. S. Peshkovskaya, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Discusses some primary data on construction of achromatic figures in the spermatogenesis of two representatives of the Pentatomidae family; the Pelomena-chromosome complex $7 + X(Y)$, and the Eurydema-6 + $X(Y)$, and one member of the Coreidae-the Syrmastes with $10 + X(Y)$ chromosomes. Submitted by Academician I. I. Shmal'gauzen, 2 Apr 1947. FDB 49T46	
USSR/Medicine - Flies Medicine - Chromosomes Oct 1947 "Changes in Frequency of Crossing Over in Relation to the Change in Doses of Outer and Inner Factors in the Drosophila Melanogaster," B. A. Kirsanov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 Discusses variations in the process of crossing over when acted upon by: 1) various doses of an outside factor, in this case X-rays; and 2) variations in doses of an internal factor--changing the amount of inversion in nonhomologous chromosomes. Also studied changes in the frequency of fission in special x-chromosomes in relation to various doses of X-rays. Submitted by Academician I. I. Shmal'gauzen, 3 Apr 1947. FDB 49T47	USSR/Medicine - Insecticides Medicine - Insects - Eradication Oct 1947 "Specific Sensitivity of Insects to DDT," I. V. Kozhanchikov, Zool Inst, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Many insects immune to some of the strongest types of insecticides. However, one of the most effective insecticides is the newly discovered DDT preparation. Discusses specific sensitivity of various insects to this insecticide. Submitted by Academician Ye. N. Pavlovskiy, 27 Mar 1947. FDB 49T48	
USSR/Medicine - Zoology Medicine - Cells - Morphology Oct 1947 "Three New Types of Scale (Coccoidea, Diaspididae) From Central Asia," N. Borkhsenius, Zool Inst, Acad Sci USSR, 2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Describes general characteristics of three new types of scale: 1) Cryptoparlatoreopsis gen. nov. (order Aonidia halli Bod.) and the Acanthomytilus gen. nov. (order Lepidosaphes intermittens Hall), and the third new type, the Neochionaspis kirgisica sp.n. Submitted by Academician Ye. N. Pavlovskiy, 26 Mar 1947. FDB 49T49	USSR/Medicine - Viruses Medicine - Plants - Diseases Oct 1947 "Stolbur Virus, Cause for Mass Wasting of Peppers, Eggplants, and Potatoes in the South," K. S. Sukhov, A. M. Vovk, Inst Genetics, Acad Sci USSR, 2½ pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Discusses some of the characteristics, properties, and carriers of this rather widespread cause of withering of subject plants, as well as some measures for combating this virus disease. Submitted by Academician N. A. Maksimov, 12 Jun 1947. FDB 49T50	
USSR/Medicine - Rickettsia Medicine - Typhus - Virus Oct 1947 "Studies of Structure and Multiplication Cycles of the Rickettsia Prowazeki," A. V. Rumyantsev, M. K. Krantovskaya, Ye. P. Savitskaya, B. V. Zhav, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Report results of studies conducted on the Rickettsia prowazeki. Studied development of this disease: 1) in the light muscles due to pernasal infection of latter, and 2) in the intestines due to perineal infection. Submitted by Academician I. I. Shmal'gauzen, 20 Mar 1947. FDB 49T51	USSR/Medicine - Flies Medicine - Nutrition - Experimental Studies Oct 1947 "Nutritional Systems and Variations in the Drosophila Funbris F.," G. G. Tinyakov, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 3½ pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2 Reports results of experiments with 17 plants. Experiments conducted in three stages: 1) test material consisted of well-developed individual Drosophila funbris cultures raised on ordinary nutrient yeast; 2) finely chopped leaves, fruits or tubers mixed with the nutritional substance; and 3) phenotypic variations determined on individual specimens. Submitted by Academician I. I. Shmal'gauzen, 20 Mar 1947. FDB 49T52	

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FDB Periodical Abstracts Scientific No 49

RESTRICTED

USSR/Medicine - Flies
Medicine - Heredity
Oct 1947

"Study of the Sensory Periods in Development of Normal *Drosophila Melanogaster* Phenotypes," V. B. Solodnikov, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Previously determined that the relation of frequency of appearance of phenocopies (fenokopii) to growth of the grubs subjected to one or another influence not as clearly defined as analogous relation of the modification of mutant symptoms. Author discusses this phenomenon on the basis of data he obtained. Submitted by Academician I. I. Shmal'gauzen, 3 Apr 1947.

FDB 49T53

USSR/Medicine - Transplantation
Medicine - Plants
Oct 1947

"Transplantation of the Wheat Bud in the Vegetative Organs of Plants, and Its Effect on the Development of Wheat," N. P. Alejev, Bot Garden, Kazakh Br, Acad Sci USSR, Alma-Ata, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Reports experiments and tests conducted to confirm the possibility of changing conditions of growth by transplanting seed into the vegetative organs of other plants. Submitted by Academician N. A. Maksimov, 5 Apr 1947.

FDB 49T55

USSR/Medicine - Sugars
Medicine - Plants
Oct 1947

"Sugars in Plants Fed With Nitrates or Ammonia," A. F. Kalinkevich, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Discusses the types of sugars oxidized when nitrates reduced to ammonia. Used the kok-saghyz as test plant. Submitted by Academician D. N. Pryanishnikov, 17 May 1947.

FDB 49T57

USSR/Medicine - Chromosomes
Medicine - Cell Division
Oct 1947

"Lateral Division of Chromosomes," G. G. Tinyakov, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3

Darlington, Upcott, Karpechenko, and Rhoades claimed that chromosomes divide laterally as well as lengthwise. Such division has very important place in processes such as reproduction. Author briefly discusses results of experiments conducted on barley, wheat, crepis and onion to study this lateral division of chromosomes. Submitted by Academician I. I. Shmal'gauzen, 2 Apr 1947.

FDB 49T59

USSR/Medicine - Flies
Medicine - Heredity
Oct 1947

"Genetics of Adaptive Aberrational Polymorphism in *Drosophila Melanogaster*," N. P. Dubinin, Corr Mem, Acad Sci USSR, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Research on polymorphism in *Drosophila* revealed that in some cases of aberration, remarkable degree of hereditary development evident. Also showed that no Mendel's selectivity when flies possessing characteristics of aberration crossbred with normal or hybrid flies. Briefly describes the genetics and analysis of variations of this phenomenon. Submitted, 15 Jul 1947.

FDB 49T54

USSR/Medicine - Bacteria - Culture
Mathematics, Applied
Oct 1947

"Quantitative Regularity in Dynamics of Bacteria Multiplication in Logarithmic Phases," V. M. Zhdanov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Reports results of studies conducted to determine significance of the parameter k, undoubtedly a complex value and composed of several components. Submitted by Academician I. I. Shmal'gauzen, 20 Mar 1947.

FDB 49T56

USSR/Medicine - Albumin
Medicine - Heat Effects
Oct 1947

"Effect of Nucleic Acid on the Thermal Stability of Albumin," Acad A. I. Oparin, T. N. Evreinova, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2

Most living organisms maintain temperature not in excess of 45° C. Coagulation of albumin isolated from these organisms occurs at 60° C. Object of reported experiments to explain the action of the albumin of thermophilic bacteria during heat treatment. Submitted, 11 Jul 1947.

FDB 49T58

USSR/Medicine - Fungi
Medicine - Albumin
Oct 1947

"Alkyl Producing Albumin of the Tobacco Mosaic Virus," P. Agatov, Inst Microbiol, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3

For a long time scientists have had trouble determining the part that acid groups play in the infectious nature of tobacco mosaic. Agatov describes experiments and data obtained in his work on this problem. Submitted by Academician B. L. Isachenko, 28 May 1947.

FDB 49T60

RESTRICTED		FDB Periodical Abstracts Scientific No 49		RESTRICTED	
USSR/Medicine - Muscles Medicine - Evolution		Oct 1947	USSR/Medicine - Trematoda Medicine - Helminthology		Oct 1947
"Secondary Muscle-Skin Sacs and the Phylogenetic Implication of This Phenomenon," V. L. Vagin, Leningrad State U, 4 pp			"Rudimentary Sucker of the Cyclocoelum Microstomum (Trematoda)," T. A. Ginetsinskaya, Lab Invertebrate Zool, Leningrad State U, 3½ pp		
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3			"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3		
In studying the greatly changing females of various types of Dendrogaster, author became interested in the construction of the muscles. States that the subhypodermal muscles lies in two layers. Layer directly under the hypodermis, known as the ring layer, has the appearance of very closely intertwined net. Lower layer composed of anastomotic muscular bundles. Upon			Author studied the changes in the construction of the abdominal sucker, formed in the course of the ontogenesis of the Cyclocoelum microstomum. Also briefly describes characteristic structure and the muscles of the suckers of metacercaria. Submitted by Academician L. A. Orbeli, 31 Mar 1947.		
FDB		49T61	FDB		49T62
USSR/Medicine - Muscles (Contd)		Oct 1947	USSR/Medicine - Cestodes Medicine - Helminthology		Oct 1947
cutting these bundles they form many wormlike muscles. However, in other animals the whole body contains secondary vermicular forms of muscles. The somatic muscle structure has appearance of muscle-skin sacs. Discusses this phenomenon in great detail. Submitted by Academician I. I. Shmal'gauzen, 5 Apr 1947.			"Status of the Echinorhynchotaenia Fuhrmann, 1909, in the Family of Cestoda," A. A. Spasskiy, Lab Helminthol, Acad Sci USSR, 3 pp		
			"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3		
Author shows various reasons for his contention that the Echinorhynchotaenia, observed by Fuhrmann in 1909, belong to the family of Cestoda. Submitted by Academician K. I. Skryubin, 4 Apr 1947.					
FDB		49T61	FDB		49T63
USSR/Medicine - Spectrum Analysis Medicine - Albumin		Oct 1947	USSR/Metals Steel - Thermal Measurements Steel - Notched Bar Tests		Oct 1947
"Absorption Spectrum of Structural Albumin of Muscles in the Ultraviolet Range," Kh. M. Ravikovich, O. N. Setkina, K. D. Leyont'yeva, Lab Phys Chem, Inst Biol and Med Chem, Acad Sci USSR, 4 pp			"Incision Effect in the Phenomenon of Cold Brittleness of Steel," Ye. M. Shevandin, Leningrad Phys Tech Inst, Acad Sci USSR, Cent Sci Res Inst MSP imeni A. N. Krylov, 18 pp		
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3			"Zhur Tekh Fiz" Vol XVII, No 10		
Gives results of experiments conducted to study the absorption spectrum of muscle albumin in the ultraviolet range, and use of spectrographic method for future study of the kinetics of the processes of interrelation between myosin and actomyosin with ATP (adenosinephosphoric acid). Submitted by Academician Ya. O. Parnas, 28 Jun 1947.			Studies the effect of types of incisions on the critical temperature of frangibility during various loading speeds of soft metals. Experimental data obtained as result of constructing cold brittleness diagram in relation to speed of deformation, temper-		
FDB		49T64	FDB		49T65
USSR/Metals Iron Ores - Concentration Geological Prospecting		Mar 1946	USSR/Metals (Contd)		Oct 1947
"Susingen Iron Ore Deposits in Central Asia," M. L. Skobnikov, 4½ pp			ature of experiments, and factors of the forms of the incisions. Diagram obtained can be used to evaluate the margin of viscosity and to calculate cold brittleness. Primarily interested in working out calculations for cold brittleness of parts having incisions. Submitted, 24 May 1947.		
"Razvedka Nedr" No 2					
Deposit located on south slopes of the Karzhan-Tau Mountain Range. Describes the geographic lay of this deposit, as well as some climatic factors such as heavy snows during winter seasons. Gives geologic structure of the deposit, and presents two sectional maps, one showing geographical location, the other the basic geology of the deposit. Evaluates industrial worth of					
LC		49T66	FDB		49T65

RESTRICTED		FDB Periodical Abstracts Scientific No 49		RESTRICTED	
USSR/Metals (Contd)		Mar 1946		USSR/Metals Molybdenum Ore Deposits Surveying, Geophysical Mar 1946	
deposit. Quality of the ore varies. Ore of the contact-metamorphic type of magnetite and estimated to contain some 30 million tons of ore.				"Physicochemical Method of Surveying for Molybdenum in the Semiarid Regions Around Northern Balkhash," N. I. Tikhomirov, S. D. Miller, 5½ pp	
				"Razvedka Nedr" No 2	
				Method authors describe can be used in general for all rare metals. They intend to show that possible to use physicochemical method of survey to locate molybdenum deposits. Explain experiments and test surveys conducted and note that veins located too poor to be of industrial use. However, method has possibilities and should be investigated further.	
LC	49T66	LC	49T67		
USSR/Meteorology		Oct 1947		USSR/Minerals Quartz Geological Prospecting Mar 1946	
"Effect of Seasonal Transfer of Air Masses on the Movement of the Earth's Axis," N. L. Byzova, Black Sea Hydrophys Sta, Acad Sci USSR, 4 pp				"Examination of the Quartz Rocks of Salair" 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3				"Razvedka Nedr" No 2	
The process of nutation of the earth's axis has long been recognized. Author reports results of experiments conducted to establish more accurate analysis of the forced nutation of the earth, and how the movement of air masses over the surface of the earth has compelling effect on the earth's nutation process. Submitted by Academician V. V. Shuleykin, 8 May 1947.				One of the signs looked for in the search for ore deposits are traces of quartz rock having undergone hydrothermal changes. Such appearances have proved their worth time and again, and one of the best examples is the Semiz-buru corundum deposit. Gives several other examples of where presence of metamorphosed quartz has led to discovery of important mineral deposits. Describes the geographic lay of	
FDB	49T68	LC	49T69		
USSR/Minerals Gypsum Geology		Mar 1946		USSR/Minerals (Contd) Mar 1946	
"Shedok Gypsum Deposit," S. P. Krivokhatskiy, 3 pp				the Salair Ridge, and some of the mineral deposits located. Gives bibliography of Salair ridge.	
"Razvedka Nedr" No 2					
Deposit discovered by the Azovo-Chernomorskaya Geological Administration. Describes geographic lay of deposit and presents sectional map showing relative location. Discusses geologic and mineralogic features of deposit. Mentions that no difficulty should be experienced in working this deposit as it is in vicinity of the Chernorechensk and Bol'she-Labinsk coal deposits, and also use can be made of hydroelectric power generated on Malaya Laba River.					
LC	49T70	LC	49T69		
USSR/Mines and Mining Mining Machinery Mining Methods		Oct 1947		USSR/Mines and Mining Drilling Machinery Bits Mar 1946	
"Mechanization of the Open Stope Mining of the Chermkhovsk Coal Deposits," G. P. Egunov, Mining Engr, 3 pp				"Geologic Survey Drilling by Means of Diamond Bits," K. K. Perevoznikov, 10½ pp	
"Ugol'" No 10 (259)				"Razvedka Nedr" No 2	
Briefly discusses mechanization adopted at the open pit mines for working the Chermkhovsk coal deposits. Discusses system of tracks laid to permit easy transportation of coal by coal waggons, and also facilitate operation of excavators and cranes.				Briefly discusses some particulars of diamond drills. Much of the material author presents has been taken from US and English journals. Describes the bit having few diamonds on it, method used for casting of bits, agglomeration of bits, the bit with agglomeration teeth set in, operation of agglomerated bit, the relation of drilling speed to pressure on the	
FDB	49T71	LC	49T72		

RESTRICTED	FDB Periodical Abstracts Scientific No 49	RESTRICTED	
USSR/Mines and Mining Coal Geological Prospecting	Mar 1946	USSR/Mines and Mining (Contd) Mar 1946	
"Kansk-Achinsk Lignite Basin," V. I. Yavorskiy, Laureate of Stalin Prize, 5½ pp		bit and revolutions of the drilling rig, effect of washing on production and role of washing when drilling with diamond drills, and the speed of drilling through rock with diamond bit.	
"Razvedka Nedr" No 2			
Gives geographic lay of basin with chart showing var- ious regions and some of the mines (1944). Briefly discusses development of this region. At present, 23 known deposits in this general area. Briefly de- scribes in detail the Itatsk, Nazarovsk Sobolev, Borodin, and Vershino-Rybinsk deposits. Suggests that one of best contributions that could be made for effi-			
LC	49T73	LC	49T72
USSR/Mines and Mining (Contd)	Mar 1946	USSR/Nuclear Physics - Atoms - Properties Ferromagnetism	Oct 1947
cient development of this deposit is compilation of geological map RF 1:200,000. He hopes that this may be done in very near future.		"Reality of Some Regularities Which Connect Inter- atomic Spaces and Magnetic Properties," Ya. G. Dorf- man, 3½ pp	
		"Zhur Tekh Fiz" Vol XVII, No 10	
		Discusses two regularities put forth by F. M. Gal'- perin, which connect spacing between atoms to mag- netic properties of ferromagnets. However, author shows that these regularities by no means results of available experimental data, and cannot be con- sidered really substantial. Submitted, 10 Jun 1947.	
LC	49T73	FDB	49T74
USSR/Nuclear Physics - Lattices Plastic Deformation	Oct 1947	USSR/Petroleum Industry Petroleum - Well Drilling	Mar 1946
"Plastic Deformation and Dimensions of the Elementary Nucleic Lattices," B. M. Rovinskiy, T. V. Tagunova, Inst Metallophys TsNIICM, USSR, Moscow, 5½ pp		"Petroleum Baths--Their Use for Correcting Break- downs in Core Drilling," V. V. Basov, 4 pp	
"Zhur Tekh Fiz" Vol XVII, No 10		"Razvedka Nedr" No 2	
Discusses experiments conducted to determine whether or not there is nonelastic change in dimensions of the elementary nuclei as result of plastic deformation in metals. Sets up the conditions which led to experi- ments, methods and results, and evaluation. Submit- ted, 23 Jun 1947.		Method can be used only when drilling through clay or sand. Discusses various types of breakdowns which can occur. If drill should get stuck in the bore, no need to take the trouble of breaking drill and then fishing for the bit. Author states that petro- leum bath will act on the sand or clay making soft pliable mass which will release the bit and the rig can be drawn up with no trouble. Gives mathematical	
FDB	49T75	LC	49T76
USSR/Petroleum - Well Drilling Petroleum Industry	Jan 1947	USSR/Petroleum Industry (Contd)	Mar 1946
"Moment of Gyration in the Drilling of Petroleum Wells," V. S. Tulin, 3½ pp		formula to be used to calculate the amount of petro- leum which must be used for various types of bores. Briefly discusses raising the rig and operations necessary before drilling can be resumed.	
"Energeticheskii Byull" No 1			
Most widely used method for drilling is by means of rotary drill. In this case, however, if too much pressure is applied to the bit the bore is liable to diverge from the vertical and go off at uncontrollable angle. Therefore, author shows advantages of using low bit pressure and suggests several methods to secure this.			
LC	49T77	LC	49T76

RESTRICTED	FDB Periodical Abstracts Scientific No 49	RESTRICTED	
USSR/Physics Jet Propulsion Supersonic Flow, Ultrasonic "Escape of Supersonic Jet from Container with Flat Sides," F. I. Frankl', 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3 In "Izv Akad Nauk SSSR, Matematicheskaya Ser" 9, 121 (1945), author carried out calculations to determine the escape of supersonic jet from container with flat sides with the maximum possible discharge obtained by Trikomi in his experiments, reported in book published in 1947, "Linear Equations for Particular Products of the Secondary Turbulence Type Series," in which he	Oct 1947	USSR/Physics Thermometers, Resistance Temperature - Measurements "Measuring the Temperature of Semiconductors by Resistance Thermometers," B. T. Kolomiets, I. T. Sheftel', Agr Phys Inst, Leningrad, 5½ pp "Zhur Tekh Fiz" Vol XVII, No 10 Use of resistance thermometers to measure tempera- ture is present-day accepted technical operation. Nevertheless, the low temperature coefficient and the high electroconductivity of metals, used until now, limit to very great extent construction and universal use of apparatus. Submitted, 30 May 1947.	Oct 1947
FDB USSR/Physics (Contd) used Chaplygin's equations. In this article Frankl' discusses an exact solution for the extreme case. Submitted by Academician L. S. Leybenzon, 25 Apr 1947.	49T78 Oct 1947	FDB USSR/Physics Strain Magnetic Susceptibility "Study of Strain Diagrams, and Determination of the Limits of Flux Flow by Magnetic Method," M. V. Dekhtyar, 7½ pp "Zhur Tekh Fiz" Vol XVII, No 10 Describes method to study strain diagrams of ferro- magnets on the basis of increase in the amount of magnetic susceptibility. Permits determination of the charge, which conforms to the beginning of flow in various crystals (limits of elasticity), and also determination of the limits of flux flow. Shows	49T79 Oct 1947
FDB USSR/Physics Conductors, Semi Fields, Electromagnetic "Phenomenon of Improving Semiconductors by Current Carriers Under the Effect of Contact Field," V. I. Lyushenko, A. M. Pavlenko, Phys Inst, Acad Sci USSR, 6 pp "Zhur Tekh Fiz" Vol XVII, No 10 Authors clarify two main points: 1) contact electrode makes contact only at separate points, and 2) if con- tact electrode has positive difference of potential relating to the copper oxide (conduction by drifts), then occurs the phenomenon of increased conductivity	49T78 Oct 1947	FDB USSR/Physics (Contd) that individual steps of the process of deformation clearly evidenced only during formation of the tex- ture of the elementary magnetic moments (back "spinov"), created by the continuous commutation of constant magnetic field, or as result of the effect of fluctuating magnetic field during subjection of sample to strain. Submitted, 28 May 1947.	49T80 Oct 1947
FDB USSR/Physics (Contd) of the semiconductor (enrichment by drifts) in the regions around the contacts, as result of the contact fields. Submitted to "Journal of Experimental and Theoretical Physics," 25 Mar 1947, and to "Journal of Technical Physics," 6 Jun 1947.	49T81 Oct 1947	FDB USSR/Physics Conductivity, Surface Ions - Exchange "Surface Ionization of Barium on Tungsten," G. A. Morozov, VNIIT, Leningrad, 5½ pp "Zhur Tekh Fiz" Vol XVII, No 10 Results obtained by author as result of measuring temperature relationships of surface ionization of barium on tungsten, essentially different from re- sults obtained by Gazri, but agree fairly well with theoretical data obtained by use of Langmuir-Sakh's equations. Approximation with use of these equa- tions more accurate if corrections made for the	49T80 Oct 1947
FDB	49T81	FDB	49T82

RESTRICTED	FDB Periodical Abstracts Scientific No 49	RESTRICTED
USSR/Physics Heat - Conductivity Conductivity, Thermal	Oct 1947	USSR/Physics (Contd) Oct 1947
"Contact Heat Conductance of the Layer of Spherical Particles," R. N. Mullokandov, Moscow State U, Lab Molecular-Thermal Phenomena, 4 pp		stimulated state of the atom and the barium ion. Submitted, 3 Mar 1947.
"Zhur Tekh Fiz" Vol XVII, No 10		
Author conducted experiments to determine contact temperature conductivity of dispersion system, and from results to conduct evaluation of thermal conductivity of the system. Made use of methods suggested by Kondrat'yev and Statsanko to find the coefficient of the temperature conductance of dispersion systems. Submitted, 2 Jun 1947.		
FDB	49T83	FDB
USSR/Physics Oscillators, Blocking Oscillations - Theory	Oct 1947	USSR/Physics Fields, Electromagnetic Wave Guides
"Operation of a Blocking Oscillator," D. M. Levitas, V. V. Migulin, Sci Res Inst Phys, Moscow State U, 10pp		"Wave Guides With Improved Radiation," S. I. Tetel'-baum, Inst Electrotech, Acad Sci USSR, 5½ pp
"Zhur Tekh Fiz" Vol XVII, No 10		"Zhur Tekh Fiz" Vol XVII, No 10
Explain the transfer from constant oscillation system of operation to blocking process as result of self-modulation and interrupted oscillation. Authors conduct calculations for the blocking process under ideal conditions. Show possibility of correct qualitative description of the blocking process on the basis of the effect of circuit currents without taking into		Discusses more favorable system finding itself in unequal electromagnetic field, and radiating highly controlled waves for great distance. Does not discuss waves of very small length or small fields as their inequality varies slowly in the function of coordinates. Submitted, 10 Jan 1947.
FDB	49T84	FDB
USSR/Physics (Contd)	Oct 1947	USSR/Physics Recorders, Sound Sound Waves - Photography
account the anode reaction. Report that experimental qualities coincided with theoretical qualities. Submitted, 11 Jun 1947.		"Basic Characteristics of Lateral Recording of Sound," A. I. Parfent'yev, 14 pp
		"Zhur Tekh Fiz" Vol XVII, No 10
		Discusses characteristics of basic parameters which characterize lateral photographic recording. Gives peculiarities which connect performance, coefficient of modulation, and the dynamic range with the clear and blackened parts of the phonogram. Establishes mathematic relationships, important between the degree of performance, noise level, clarity, and frequency. Submitted, 14 Jan 1947.
FDB	49T84	FDB
USSR/Physics Dielectrics, Solid Measurements	Oct 1947	USSR/Physics Sound - Absorption Sea Water - Acoustic Properties
"Measurement of Dielectric Constant of Solid Dielectrics in the Centimeter Range," A. I. Starobinskiy, Moscow State U, Phys Faculty, 5½ pp		"Reverberation of the Sea in the Presence of Sound Absorption," Yu. M. Sukharevskiy, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp
"Zhur Tekh Fiz" Vol XVII, No 10		"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2
Discusses theory of method to measure dielectric constants by calculating the curve of the electric field along the wave guide, in which the dielectric inserted at the closed end. Measurements conducted with fair degree of accuracy for the dielectric constant of three dielectrics at 10 cm. Experimentally proved		In previous works, author discussed reverberation of the sea during the absence of sound damping by distribution of absorption. In this article, author gives formulas and reasons for establishing formulas to calculate reverberation of the sea when sound is absorbed. Submitted by Academician S. I. Vavilov, 27 Mar 1947.
FDB	49T87	FDB

RESTRICTED		FDB Periodical Abstracts Scientific No 49		RESTRICTED			
USSR/Physics (Contd)		Oct 1947		USSR/Physics		Oct 1947	
that possible to improve the matching of the open end of the wave guide to open space with the aid of plastic dielectric, included in the wave guide at certain distance from the open end. Submitted, 23 May 1947.				Waves, Ultrasonic Flow, Viscous			
				"Absorption of Supersonic Waves in Highly Viscous Liquids," I. G. Mikhaylov, S. B. Gurevich, Phys Inst, Leningrad State U, 31 pp			
				"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2			
				Has been noticed that actual absorption of supersonic waves in liquid much more than that as calculated according to classic theory of Stokes and Kirchoff. This difference has been explained as caused by the fact that during the observation of the acoustic phenomenon not possible to disregard			
FDB	49T87	FDB	49T89				
USSR/Physics		Oct 1947		USSR/Physics (Contd)		Oct 1947	
Lamination - Theory Elasticity							
"Some Problems in Regard to Theory of the Lamination of Anisotropic Media," Ye. V. Makhover, 4 pp				the phenomenon of viscosity. Authors generally discuss the absorption in viscous liquids, and submit formula for more accurate calculations. Submitted by Academician A. N. Terenin, 27 Mar 1947.			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2							
Discusses two types of laminar deformation: torsion deformation and flat deformation, and sets up necessary and sufficient conditions to obtain dependent constant coefficients of the media, so that the given deformation would be possible under any desired cross-sectional contour. Submitted by Academician V. I. Smirnov, 14 Apr 1947.							
FDB	49T90	FDB	49T89				
USSR/Physics		Oct 1947		USSR/Physics		Oct 1947	
Gas Flow Gas Pressure				Elasticity Stamping, Metal			
"Two-Way Discharge of a Gas from Cylindrical Container Into Pipe," K. P. Stanyukovich, 4 pp				"Pressure of a Die With a Flat Base in the Form of an Unlimited Wedge on an Elastic Semispace," L. A. Galin, 4 pp			
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2				"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2			
Discusses one of more frequently met problems in the field of gas dynamics: when a gas is discharged from cylindrical container of length l into pipe in both directions, why is it that the discharge does not begin simultaneously? In primary state the gas is passive, but its pressure and density constant. Presents formula showing reasons for this phenomenon of				Explains pressure on elastic semispace ($z < 0$) die, which in its plane has the form of unlimited wedge and possesses flat base. In these experiments the angle between the straight line and the limits of the unlimited wedge was equal to 2α . Attempts to show that there is no force of friction between the			
FDB	49T91	FDB	49T92				
USSR/Physics (Contd)		Oct 1947		USSR/Physics (Contd)		Oct 1947	
uneven flow of gas from container to pipe. Submitted by Academician M. V. Keldysh, 5 Apr 1947.				die and the base. Submitted by Academician N. I. Muskhelishvili, 17 Apr 1947.			
FDB	49T91	FDB	49T92				

FDB Periodical Abstracts Scientific No 49		FDB Periodical Abstracts Scientific No 49	
USSR/Physics Energy, Adiabatic Gas Flow Oct 1947		USSR/Physics Luminescent Materials Oscillographs - Damping Oct 1947	
"Critical Surface of an Adiabatic Flow," S. S. Byushgens, 3½ pp		"Study of the Damping of Luminescence With the Aid of a Cathode Oscillograph," N. A. Tolstoy, P. P. Feyofilov, Lab Luminescence, State Opt Inst, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3		"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3	
Stationary flow of an ideal unweighed gas, where friction and thermal conductivity absent, called adiabatic flow for purposes of brevity. Basically, studies of this adiabatic flow can be carried out along three lines: 1) on the basis of Euler's equation		Discuss several methods for quantitative study of the damping of luminescent material on periods of damping. These periods vary from 10 ⁻¹ to 10 ⁻⁵ seconds, i.e., the interval during which Becquerel's phosphoroscope can be used. Submitted by Academician S. I. Vavilov, 13 Mar 1947.	
1 - (Vgrad) V + 1/c grad p = 0 ;			
FDB 49T93 USSR/Physics (Contd) Oct 1947		FDB 49T94 USSR/Physics Explosions - Pressure Decomposition, Thermal Oct 1947	
2) the equation of continuity, div (V) = 0; and 3) the equation showing the relationship between pressure p and density c , p/c = (c/c ₀) ^k .		"Effect of Pressure on the Speed of the Thermal Decomposition of Explosives," Yu. N. Ryabinin, Inst Phys Chem, Acad Sci USSR, 3½ pp	
Submitted by Academician A. I. Nekrasov, 23 Apr 1947.		"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2	
		Author discusses results of experiments he conducted to determine the effect of superhigh pressures on the speed of thermal decomposition, occurring in the condensed form of some typical explosives. Materials used in the experiments: azid lead, fulminate of mercury, and nitropentaeritrite. Submitted by Academician N. N. Semenov, 22 Mar 1947.	
FDB 49T95 USSR/Physics Powders, Explosive Detonation - Effects Oct 1947		FDB 49T95 USSR/Physics Flow, Liquid Vortex Motion Oct 1947	
"Nature of Damping the Detonation in Powdered Explosives," A. Ya. Apin, V. K. Bobolev, Inst Phys Chem, Acad Sci USSR, 3½ pp		"Flow Around a Sphere in a Vortex Ring," A. Zenkin, Mil Air Engin Acad imeni N. Ye. Zhukovskiy, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 2		"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3	
S. Ratner and Yu. Khariton were able to determine with the aid of photographs that explosions of nitroglycerine or nitroglycol enclosed in glass tube of small diameter, start off very rapidly, but slow up and eventually die out altogether. Authors report results of experiments they conducted to determine if this		Author sets up requirements for establishment of functions for flow. Experiments consisted of having infinite straight-line flow of ideal liquid act on sphere with radius a. This flow has speed of U ₀ at infinity. Shows that there is the formation of a vortex ring, with intensity G ₁ , behind the sphere. Plane of the ring normal to the direction of U ₀ .	
FDB 49T96 USSR/Physics (Contd) Oct 1947		FDB 49T97 USSR/Physics (Contd) Oct 1947	
phenomenon of damping exists only in the case of liquid explosives or if also present for powdered explosives. Submitted by Academician N. N. Semenov, 21 Mar 1947.		but its center lies on the axis of the current symmetry. Submitted by Academician L. S. Leybenzon, 19 Mar 1947.	
FDB 49T96		FDB 49T97	

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FDB Periodical Abstracts Scientific No 49

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USSR/Physics

Gases - Adsorption
Porous Materials

Oct 1947

"Movement of Real Gases in a Porous Material," B. B. Lapuk, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3

Lapuk discusses results of experiments he conducted to determine approximate method to solve steady and unsteady movement of gases in porous material, allowing for variations of their properties in stratified conditions. Explains conditions for stabilized filtration of real gases, as well as unstabilized radial filtration of real gases in porous material. Submitted by Academician L. S. Leybenzon, 5 Apr 1947.

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49T98

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ST	Reference Division, State Department
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BS	National Bureau of Standards
SI	Smithsonian Institution
LC	Library of Congress
FDB	Foreign Documents Branch, CIA
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